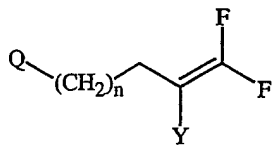
## CLAIMS

What is claimed is:

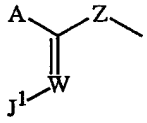
1. A compound of Formula I, an *N*-oxide thereof or an agronomically or nonagronomically suitable salt thereof,



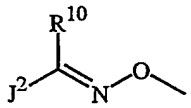
I

wherein

Q is Q-1 or Q-2;



Q-1



Q-2

Y is H, F, Cl or $CH_3$;

A is CN, $C_1$-$C_6$ alkyl, $OR^{1a}$, $SR^{1a}$, $NR^{1a}R^{2a}$ or $CONR^{1b}R^{2b}$;

Z is O, S or $NR^3$;

W is N or $CR^4$;

$J^1$ and $J^2$ are $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl, $C_4$-$C_8$ cycloalkylalkyl, $C_1$-$C_4$ alkoxy, $C_2$-$C_6$ alkoxycarbonyl or $C_2$-$C_6$ alkylcarbonyl, each optionally substituted with one G and each optionally substituted with one or more $R^5$; or

$J^1$ and $J^2$ are G, $NO_2$, CN, OH, $NR^6R^7$, $CONR^6R^7$, $OCONR^6R^7$, $C_1$-$C_4$ alkylsulfonyl, C(O)G or $S(O)_2G$;

each G is independently a phenyl ring, a naphthyl ring system, a 5- or 6-membered heteroaromatic ring or an aromatic 8-, 9-, or 10-membered fused heterobicyclic ring system, each ring or ring system optionally substituted with 1 to 5 $R^8$;

$R^{1a}$ and $R^{1b}$ are H; G; CN; or $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl or $C_4$-$C_8$ cycloalkylalkyl, each optionally substituted with one or more substituents selected from the group consisting of G, halogen, CN, $NO_2$, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_2$-$C_4$ alkoxycarbonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino and $C_3$-$C_6$ cycloalkylamino;

$R^{2a}$ and $R^{2b}$ are H; or $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl or $C_4$-$C_8$ cycloalkylalkyl, each optionally substituted with one or more substituents selected from the group consisting of halogen, CN, $NO_2$, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$

alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_2$-$C_4$ alkoxycarbonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino and $C_3$-$C_6$ cycloalkylamino; or

$R^{1a}$ and $R^{2a}$ or $R^{1b}$ and $R^{2b}$ are taken together with the nitrogen to which they are attached to form a ring including 2 to 5 atoms of carbon and optionally one additional atom of nitrogen, sulfur or oxygen, said ring optionally substituted with 1 to 2 $R^5$;

$R^3$ is H, $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl or $C_4$-$C_8$ cycloalkylalkyl;

$R^4$ is H, $C_1$-$C_4$ alkyl or CN; or

$R^4$ is a phenyl ring optionally substituted with 1 to 5 $R^8$;

each $R^5$ is independently halogen, CN, $NO_2$, $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_2$-$C_6$ alkynyl, $C_3$-$C_6$ cycloalkyl, $C_1$-$C_6$ haloalkyl, $C_2$-$C_6$ haloalkenyl, $C_2$-$C_6$ haloalkynyl, $C_3$-$C_6$ halocycloalkyl, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ haloalkoxy, $C_1$-$C_4$ alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_1$-$C_4$ haloalkylthio, $C_1$-$C_4$ haloalkylsulfinyl, $C_1$-$C_4$ haloalkylsulfonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino, $C_3$-$C_6$ cycloalkylamino, $C_2$-$C_6$ alkylcarbonyl or $C_2$-$C_6$ alkoxycarbonyl;

$R^6$ and $R^7$ are each independently H; or $C_1$-$C_6$ alkyl, $C_3$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_6$ cycloalkyl, $C_2$-$C_6$ alkylcarbonyl or $C_2$-$C_6$ alkoxycarbonyl, each optionally substituted with halogen; or

$R^6$ and $R^7$ can be taken together with the nitrogen to which they are attached to form a ring which includes 2 to 5 atoms of carbon and optionally one additional atom of nitrogen, sulfur or oxygen, said ring optionally substituted with halogen;

each $R^8$ is independently halogen, CN, $NO_2$, $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_2$-$C_6$ alkynyl, $C_3$-$C_6$ cycloalkyl, $C_1$-$C_6$ haloalkyl, $C_2$-$C_6$ haloalkenyl, $C_2$-$C_6$ haloalkynyl, $C_3$-$C_6$ halocycloalkyl, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ haloalkoxy, $C_1$-$C_4$ alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_1$-$C_4$ haloalkylthio, $C_1$-$C_4$ haloalkylsulfinyl, $C_1$-$C_4$ haloalkylsulfonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino, $C_3$-$C_6$ cycloalkylamino, $C_2$-$C_6$ alkylcarbonyl or $C_2$-$C_6$ alkoxycarbonyl, or

each $R^8$ is independently a phenoxy ring or a phenyl ring, each ring optionally substituted with 1 to 5 $R^5$;

$R^{10}$ is H; or $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_2$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl or $C_4$-$C_8$ cycloalkylalkyl, each optionally substituted with one or more substituents selected from the group consisting of halogen, CN, $NO_2$, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_2$-$C_4$ alkoxycarbonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino and $C_3$-$C_6$ cycloalkylamino; or

$R^{10}$ is $C_1$-$C_6$ alkylthio, CN, $CO_2R^{12}$, $CONR^{12}R^{13}$ or phenyl optionally substituted with 1 to 5 $R^{11}$;

each $R^{11}$ is independently halogen, CN, $NO_2$, $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_2$-$C_6$ alkynyl, $C_3$-$C_6$ cycloalkyl, $C_1$-$C_6$ haloalkyl, $C_2$-$C_6$ haloalkenyl, $C_2$-$C_6$ haloalkynyl, $C_3$-$C_6$ halocycloalkyl, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ haloalkoxy, $C_1$-$C_4$ alkylthio, $C_1$-$C_4$ alkylsulfinyl, $C_1$-$C_4$ alkylsulfonyl, $C_1$-$C_4$ haloalkylthio, $C_1$-$C_4$ haloalkylsulfinyl, $C_1$-$C_4$ haloalkylsulfonyl, $C_1$-$C_4$ alkylamino, $C_2$-$C_8$ dialkylamino, $C_3$-$C_6$ cycloalkylamino, $C_2$-$C_6$ alkylcarbonyl, or $C_2$-$C_6$ alkoxycarbonyl;

$R^{12}$ and $R^{13}$ are each independently H or $C_1$-$C_6$ alkyl; and

n is 1, 3 or 5;

provided that

(1) when Y is F, Z is S, n is 1, A is $SR^{1a}$, $NR^{1a}R^{2a}$ and W is N, then $J^1$ is other than alkyl, G, CN or cycloalkyl;

(2) $J^1$ is other than 3-(4-trifluoromethyl)pyridinylcarbonyl or an *N*-oxide thereof;

(3) when $R^{10}$ is H, methyl, ethyl, phenyl or 4-fluorophenyl, and $J^2$ is phenyl substituted with $R^8$, then $R^8$ is other than 2-fluoroethoxy;

(4) when Z is NH, W is N, and A is $SR^{1a}$, then $J^1$ is other than phenyl substituted at the 2 and the 6 positions with alkyl or cycloalkyl; and

(5) when Z is $NR^3$, W is N or CH, A is $NR^{1a}R^{2a}$, and $R^{1a}$ or $R^{2a}$ is H or alkyl, then $J^1$ is other than CN or $NO_2$.

2. A compound of Claim 1 wherein

Q is Q-1; and

$J^1$ is G; or $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl, $C_4$-$C_8$ cycloalkylalkyl, $C_1$-$C_4$ alkoxy, $C_2$-$C_6$ alkoxycarbonyl or $C_2$-$C_6$ alkylcarbonyl, each optionally substituted with one or more $R^5$.

3. A compound of Claim 2 wherein

Y is H or F;

A is CN, $C_1$-$C_6$ alkyl, $OR^{1a}$ or $NR^{1a}R^{2a}$;

Z is S;

W is N;

$R^{1a}$ and $R^{2a}$ are each independently H, $C_1$-$C_4$ alkyl, $C_3$-$C_4$ alkenyl, $C_3$-$C_4$ alkynyl; and

$R^5$ and $R^8$ are each independently halogen, $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkoxy, CN, $NO_2$, $CF_3$ or $OCF_3$.

4. A compound of Claim 1 wherein

Q is Q-1; and

$J^1$ is G, $NO_2$, CN, OH, $NR^6R^7$, $CONR^6R^7$, $C_1$-$C_4$ alkylsulfonyl, C(O)G or $S(O)_2G$.

5. A compound of Claim 4 wherein

Y is H or F;

A is $OR^{1a}$, $SR^{1a}$ or $NR^{1a}R^{2a}$;

W is N or CH;

$R^{1a}$ and $R^{2a}$ are each independently H, $C_1$-$C_6$ alkyl, $C_2$-$C_6$ alkenyl, $C_3$-$C_6$ alkynyl, $C_3$-$C_7$ cycloalkyl or $C_4$-$C_8$ cycloalkylalkyl, each optionally substituted with one to three halogen;

$R^{1a}$ and $R^{2a}$ can be taken together with the nitrogen to which they are attached to form a ring including 2 to 5 atoms of carbon and optionally one additional atom of nitrogen, sulfur or oxygen, and said ring can be optionally substituted with 1 to 2 $R^5$;

$R^3$ is H or $C_1$-$C_4$ alkyl;

$R^5$ and $R^8$ are each independently halogen, $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkoxy, CN, $NO_2$, $CF_3$ or $OCF_3$; and

n is 1 or 3.

6. A compound of Claim 1 wherein

Q is Q-1;

Y is H;

Z is S;

W is N;

A is $NR^{1a}R^{2a}$;

$J^1$ is phenyl optionally substituted with 1 to 5 $R^5$;

$R^{1a}$ and $R^{2a}$ are each independently H or $C_1$-$C_6$ alkyl; and

n is 1 or 3.

7. A compound of Claim1 wherein

Q is Q-2;

Y is H;

$J^2$ is $C_1$-$C_6$ alkyl or phenyl optionally substituted with 1 to 5 $R^5$;

$R^{10}$ is H, $C_1$-$C_6$ alkyl, $C_1$-$C_6$ alkylthio, $CONR^{12}R^{13}$ or phenyl optionally substituted with 1 to 5 $R^{11}$; and

n is 1 or 3.

8. A compound of Claim 1 wherein

Q is Q-2;

Y is F;

$J^2$ is $C_1$-$C_6$ alkyl or phenyl optionally substituted with 1 to 5 $R^5$;

$R^{10}$ is H, $C_1$-$C_6$ alkyl, $C_1$-$C_6$ alkylthio, $CONR^{12}R^{13}$ or phenyl optionally substituted with 1 to 5 $R^{11}$; and

n is 1 or 3.

9. A compound of Claim 1 wherein

Q is Q-1;

Y is H;

Z is S;

A is $SR^{1a}$;

W is N;

$J^1$ is CN, $NO_2$, OH, $C_1$-$C_4$ alkoxy, or phenyl optionally substituted with 1 to 5 $R^5$;

$R^{1a}$ is $C_1$-$C_6$ alkyl; and

n is 1 or 3.

10. A compound of Claim 1 wherein

Q is Q-1;

Y is H or $CH_3$;

Z is S;

A is $OR^{1a}$ or $SR^{1a}$;

W is N; and

$J^1$ is CN.

11. A composition for controlling an invertebrate pest comprising a biologically effective amount of a compound of Claim 1 and at least one additional component selected from the group consisting of a surfactant, a solid diluent and a liquid diluent, said composition optionally further comprising an effective amount of at least one additional biologically active compound or agent.

12. The composition of Claim 11 wherein the at least one additional biologically active compound or agent is selected from an insecticides of the group consisting of a pyrethroid, a carbamate, a neonicotinoid, a neuronal sodium channel blocker, an insecticidal macrocyclic lactone, a γ–aminobutyric acid (GABA) antagonist, an insecticidal urea, a juvenile hormone mimic, a member of *Bacillus thuringiensis*, a *Bacillus thuringiensis* delta endotoxin, and a naturally occurring or a genetically modified viral insecticide.

13. The composition of Claim 11 wherein the at least one additional biologically active compound or agent is selected from the group consisting of abamectin, acephate, acetamiprid, acetoprole, amidoflumet (S-1955), avermectin, azadirachtin, azinphos-methyl, bifenthrin, bifenazate, bistrifluron, buprofezin, carbofuran, chlorfenapyr, chlorfluazuron, chlorpyrifos, chlorpyrifos-methyl, chromafenozide, clothianidin, cyfluthrin, beta-cyfluthrin, cyhalothrin, lambda-cyhalothrin, cypermethrin, cyromazine, deltamethrin, diafenthiuron, diazinon, diflubenzuron, dimethoate, dinotefuran, diofenolan, emamectin, endosulfan, esfenvalerate, ethiprole, fenothicarb, fenoxycarb, fenpropathrin, fenvalerate, fipronil, flonicamid, flucythrinate, tau-fluvalinate, flufenerim (UR-50701), flufenoxuron, gamma-chalothrin, halofenozide, hexaflumuron, imidacloprid, indoxacarb, isofenphos, lufenuron,

malathion, metaldehyde, methamidophos, methidathion, methomyl, methoprene, methoxychlor, methoxyfenozide, metofluthrin, monocrotophos, methoxyfenozide, novaluron, noviflumuron (XDE-007), oxamyl, parathion, parathion-methyl, permethrin, phorate, phosalone, phosmet, phosphamidon, pirimicarb, profenofos, profluthrin, protrifenbute, pymetrozine, pyridalyl, pyriproxyfen, rotenone, S1812 (Valent) spinosad, spiromesifen (BSN 2060), sulprofos, tebufenozide, teflubenzuron, tefluthrin, terbufos, tetrachlorvinphos, thiacloprid, thiamethoxam, thiodicarb, thiosultap-sodium, tolfenpyrad, tralomethrin, trichlorfon, triflumuron, aldicarb, fenamiphos, amitraz, chinomethionat, chlorobenzilate, cyhexatin, dicofol, dienochlor, etoxazole, fenazaquin, fenbutatin oxide, fenpyroximate, hexythiazox, propargite, pyridaben, tebufenpyrad, *Bacillus thuringiensis aizawai*, *Bacillus thuringiensis kurstaki*, *Bacillus thuringiensis* encapsulated delta-endotoxin, baculovirus, entomopathogenic bacteria, entomopathogenic virus and entomopathogenic fungi.

14. The composition of Claim 11 wherein the at least one additional biologically active compound or agent is selected from the group consisting of cypermethrin, cyhalothrin, cyfluthrin and beta-cyfluthrin, esfenvalerate, fenvalerate, tralomethrin, fenothicarb, methomyl, oxamyl, thiodicarb, acetamiprid; clothianidin, imidacloprid, thiamethoxam, thiacloprid, indoxacarb, spinosad, abamectin, avermectin, emamectin, endosulfan, ethiprole, fipronil, flufenoxuron, triflumuron, diofenolan, pyriproxyfen, pymetrozine, amitraz, *Bacillus thuringiensis aizawai*, *Bacillus thuringiensis kurstaki*, *Bacillus thuringiensis* encapsulated delta-endotoxin and entomophagous fungi.

15. A method for controlling an invertebrate pest comprising contacting the invertebrate pest or its environment with a biologically effective amount of a compound of Claim 1.

16. A method for controlling an invertebrate pest comprising contacting the invertebrate pest or its environment with a biologically effective amount of a composition of Claim 11.

17. The method of Claim 15 or Claim 16 wherein the invertebrate pest is a cockroach, an ant or a termite which is contacted by the compound by consuming a bait composition comprising the compound.

18. The method of Claim 15 or Claim 16 wherein the invertebrate pest is a mosquito, a black fly, a stable, fly, a deer fly, a horse fly, a wasp, a yellow jacket, a hornet, a tick, a spider, an ant, or a gnat which is contacted by a spray composition comprising the compound dispensed from a spray container.

19. A spray composition, comprising:

(a) a compound of Claim 1; and

(b) a propellant.

20. A bait composition, comprising:

(a) a compound of Claim 1;

(b) one or more food materials;

(c) optionally an attractant; and

(d) optionally a humectant.

21. A device for controlling an invertebrate pest, comprising:

(a) the bait composition of Claim 20; and

(b) a housing adapted to receive the bait composition, wherein the housing has at least one opening sized to permit the invertebrate pest to pass through the opening so the invertebrate pest can gain access to the bait composition from a location outside the housing, and wherein the housing is further adapted to be placed in or near a locus of potential or known activity for the invertebrate pest.